REMARKS

Applicants respectfully request re-consideration of the subject application.

Claims 1 and 32-40 are currently pending. In this Amendment, claims 1 and 40 have been amended. No other claims have been added or canceled.

Applicants reserve all rights under the doctrine of equivalents.

Elections/Restrictions

The Examiner withdrew claim 40 as being distinct from claim 1 and directed to a non-elected invention. Applicants elect claims 1 and 32-39 with traverse. "The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practices with another materially different product or (2) the products as claimed can be used in a materially different process of using that products" (MPEP § 806.05(h)). The Examiner apparently equates applicants' claimed power generating apparatus as the product and further asserts that this power generating product can be used in the claimed process of claim 40 where no hydrogen is recycled back to the anode (Office Action, p. 2). However, in claim 40, applicants claim "recycling hydrogen in an outflow stream of the anode of the fuel cell back to the anode." Thus, in claim 40, applicants claim a process that recycles hydrogen back to the anode. Therefore, because claim 40 claims recycling hydrogen back to the anode, claim 40 is not distinct from claim 1 and should not be restricted. Accordingly, applicants respectfully request that the Examiner withdraw the restriction requirement.

Rejections under 35 U.S.C. § 103(a)

Claims 1, 32-34, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Keefer et al., U.S. Patent Publication No. 2002/0142208.

Applicants do not admit that Keefer is prior art and reserves the right to swear behind the reference at a later date.

Keefer discloses an electrical current generating system that includes a fuel cell, a hydrogen gas separation system and means for recovering energy from the hydrogen gas separation system. The hydrogen gas separator further includes a pressure swing adsorption (PSA) unit. The PSA unit can be used as a pressure booster to overcome the pressure drop around the anode loop. Heavy reflux gas (pressurized from the heavy product stream) and feed gas is used to pressurize the PSA unit. If the pressure differential in the PSA unit is sufficient, then a combustor is not needed because the recovery of light product gas for recycling to the anode inlet is high and so little light product gas remains in the heavy product stream that then contains substantially just carbon dioxide and/or water vapor. However, Keefer does not disclose tapping off this hydrogen for external use.

For example, gas from the outlet of the anode passes along conduit first to be treated in the PSA unit. The light product gas (containing enriched hydrogen) is then output from the PSA unit along conduit to be delivered back to the input of the anode. It is this stream in which most of the hydrogen is present and it is all eventually delivered to the input of the anode.

The heavy product stream (containing enriched carbon dioxide) is output from the PSA unit along conduit where it is compressed and returned by a conduit either to be returned to the PSA unit or sent to the combustor in order to transfer carbon dioxide to the cathode. Gas on the cathode side of the system is also in a closed loop, and therefore it can be seen that all the gas is retained within the system.

Claim 1, as amended, reads as follows:

A power generation apparatus comprising:
a fuel cell including an anode;
a reforming module, wherein the reforming module is adapted to reform hydrocarbon fuel into hydrogen and other components, and to separate said hydrogen from said other components, the apparatus being

arranged so that said hydrogen is fed from the reforming module to the anode of the fuel cell;

a recycling arrangement to recycle hydrogen in the outflow stream of the anode of the fuel cell back to the anode; and

a controlling arrangement to control the amount of hydrogen recycled and to tap off hydrogen that is not recycled.

(Claim 1, as amended)(emphasis added).

The Examiner admits that Keefer does not disclose "controlling arrangement to control the amount of hydrogen recycled." Instead, the Examiner apparently takes Official Notice that this claim element is well-known in the art. Applicants respectfully challenges the Examiner's Official Notice that "controlling arrangement to control the amount of hydrogen recycled" as claimed is well-known and requests a prior art citation to support the Examiner's position.

In addition, the section of Keefer the Examiner cites as disclosing recycling hydrogen discloses that hydrogen is re-circulated and replenished around the anode loop. Because this is system is closed, Keefer does not disclose tapping this re-circulated hydrogen external to Keefer's electrical generating system. Because Keefer does not disclose externally tapping hydrogen or a controlling arrangement to control the amount of hydrogen recycled, Keefer does not disclose "a controlling arrangement to control the amount of hydrogen recycled and to tap off hydrogen that is not recycled" as claimed in claim 1.

Therefore, claim 1 and claims 32-34 and 38 that depend on claim 1 are not rendered obvious by Keefer and the Examiner's Official Notice.

Claims 35-37 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Keefer and U.S. Patent Application No. 2002/0085967 of Yokota ("Yokota"). Applicants reserve the right to swear behind the reference at a later date.

Yokota discloses a hydrogen generation apparatus that comprises a vaporizer, reactor, and intermittent injector. The vaporizer heats the reactants and supplies the heated reactants to the reactor. The intermittent injector injects air

into the reactor. In the reactor, the reactants react to produce hydrogen gas. The exhaust gas from the reactor is discharged through a flow passage.

Claims 35-37 and 39 depend on claim 1. Claim 1, as amended, reads as follows:

> A power generation apparatus comprising;
> a fuel cell including an anode;
> a reforming module, wherein the reforming module is adapted to reform hydrocarbon fuel into hydrogen and other components, and to separate said hydrogen from said other components, the apparatus being arranged so that said hydrogen is fed from the reforming module to the anode of the fuel cell;
> a recycling arrangement to recycle hydrogen in the outflow stream of the anode of the fuel cell back to the anode; and
> a controlling arrangement to control the amount of hydrogen recycled and to tap off hydrogen that is not recycled.

(Claim 1, as amended)(emphasis added).

As discussed above, Keefer does not disclose "a controlling arrangement to control the amount of hydrogen recycled and to tap off hydrogen that is not recycled" (emphasis added). Applicants respectfully submit that Yokota does not cure this deficiency. Although Yokota discloses a flow passage for discharging exhaust gas, Yokota's flow passage is not a controlling apparatus to control recycling part of the exhaust gas and externally tapping off the other part of exhaust gas. Thus, Yokota does not disclose the claimed element.

Therefore, applicants respectfully submit that claims 35-37 and 39 that depend on claim 1 are not rendered obvious by the combination. Accordingly, applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Claim 40

As discussed above, the Examiner withdrew claim 40 as being directed to a non-elected invention and applicants traversed the withdrawal. Furthermore, applicants respectfully submit that claim 40 is not rendered obvious by either the

combination of Keefer and the Examiner's Official Notice or the combination of Keefer and Yokota.

Claim 40, as amended, recites:

> A method of generating power and producing hydrogen comprising:
> reforming hydrocarbon fuel into hydrogen and other components;
> separating said hydrogen from said other components;
> feeding said hydrogen to an anode of a fuel cell;
> recycling hydrogen in an outflow stream of the anode of the fuel cell back to the anode;
> controlling the amount of hydrogen recycled; and
> tapping off external hydrogen that is not recycled.

(Claim 40, as amended)(emphasis added). For reasons discussed above, the combination of Keefer and the Examiner's Official Notice or the combination of Keefer and Yokota do not disclose "controlling the amount of hydrogen recycled; and tapping off external hydrogen that is not recycled." Thus, because neither combination discloses this claimed element, applicants respectfully submit that the combination of Keefer and the Examiner's Official Notice or the combination of Keefer and Yokota do not render obvious claim 40.

SUMMARY

Claims 1 and 32-39 are currently pending. Claim 40 is withdrawn. In view of the foregoing amendments and remarks, applicants respectfully submit that the pending claims overcome the applicable rejections.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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